Valve for Water and Chemical Base Fluids

**VCC Series**

2/3 Port Air Operated Valve

---

**Applicable for 2 liquid paint (VCC12D)**

- PTFE diaphragm structure = Sliding part eliminated
- Less paint adhesion

**Mountable on a robot arm (space-saving, lightweight)**

- 2 valves per station (30 mm pitch)
- 2/3 port valves mixed mounting
- Resin manifold block

---

Weight: **2700 g**

---

**VCK Series** / ø6 to ø12

- SUS316L Stainless steel fitting

**2 port valve**

**3 port valve**

**VCC12(D)**

**VCC13**

---

**VNA**  **VNB**  **SGC**  **SGH**  **VNC**  **VNH**  **VND**  **VCC**  **TQ**
Paint Line System
(Application example)

Water/Chemical Base Paint, Deionized Water, Cleaning Solvent type

Painting

Paint gun
Built-in 2 port valve

Paint supply
(Direct supply possible)
(Max. 40 colors)

Paint circulation
(for 3 port valve)

Selects paint color.
2/3 port valve

Gate valve (2 port)
(Built in the manifold)

Cleaning valve (2 port)

Note) Valves must be mounted in the right direction. Refer to page 657.

Leakage detection port
Paint leakage to the pilot piping can be checked visually. Even when leakage occurs, no backflow between the paint and pneumatics.

VCC manifold

Painting

2 port valve (VCC12)

Diaphragm

2 port valve (VCC12D)

Note) Valves must be mounted in the right direction. Refer to page 657.

3 port valve (VCC13)

Switch indicator light
(Blue)

2 Liquid Paint type/PTFE Diaphragm

2 port valve (VCC12D)

Note) Valves must be mounted in the right direction. Refer to page 657.

Single Paint, Solvent, Ink Control type/Single Unit

2 port valve (VCC12(D))

3 port valve (VCC13)

Note 1) Pressure cannot be applied from the RETURN port.

Note 2) Valves must be mounted in the right direction. Refer to page 657.
Manifold Valve

Separable Resin Manifold Block

- Easy addition and reduction of stations
- Tough PPS (Polyphenylene Sulfide) resin is used.
- Fluororesin is contained. (Less fluid adhesion)
- Antistatic (Surface resistance $10^2$ to $10^5 \ \Omega$)
- SUS316L Stainless steel fitting is standardized.

Stainless 40° swivel elbow centralizes piping.

Leakage detection port

IN port

3 port valve manifold block assembly

2 port valve manifold block assembly

Clip

Antistatic One-touch fitting
Easy attachment/removal by clip.
No seal tape necessary. (Conductive)

Cartridge type valve
Valve can be replaced without touching the piping.

Less build-up of liquid → Better cleaning performance, reduce mixing of colors
Liquid build-up at valve is 0.01 cc or less.
Ensures stable sealing performance for misalignment.

Spherical surface + Tapered shape

Special fluororesin seal

O-ring back-up ensures sealing performance.

IN port

Gate valve

PA (pilot) port

PA (pilot) port

RETURN port

IN port

2 port valve

3 port valve

PA (pilot) port

RETURN port

IN port

PA (pilot) port

RETURN port

IN port

PA (pilot) port

RETURN port

IN port

PA (pilot) port

RETURN port

IN port

PA (pilot) port

RETURN port

IN port

PA (pilot) port

RETURN port

IN port

PA (pilot) port

RETURN port

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PA (pilot) port

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PA (pilot) port

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IN port

PA (pilot) port

RETURN port

IN port

PA (pilot) port

RETURN port

IN port

PA (pilot) port

RETURN port

IN port

PA (pilot) port

RETURN port

IN port

PA (pilot) port

RETURN port

IN port

PA (pilot) port

RETURN port

Indication function
Operating condition can be checked visually, or by touching.
Indicator color
Blue ... VCC12, 13
Red ... VCC12D

SGC
SGH
VNC
VNH
VND
VNA
VNB

643
Disassembly and maintenance are possible. Product design takes maintenance performance into consideration.

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Port size</th>
<th>Applicable tubing O.D. x I.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male connector</td>
<td>VCKH</td>
<td>G1/4</td>
<td>6 x 4</td>
</tr>
<tr>
<td>40° swivel elbow</td>
<td>VCKK</td>
<td></td>
<td>8 x 6</td>
</tr>
<tr>
<td>90° swivel elbow</td>
<td>VCKL</td>
<td></td>
<td>10 x 7.5</td>
</tr>
</tbody>
</table>

Note) Applicable to special manifold, too.
Valve for Water and Chemical Base Fluids
(2/3 Port Air Operated Valve)

VCC Series

INDEX

• How to Order P.646

• Specifications/Weight P.648

• Dimensions Single valve unit P.650
  Manifold P.651
  SUS316L Stainless steel fittings P.652

• Special Tools P.654

• Disassembly/Assembly/ Maintenance Procedure P.656

• Replacement Parts P.658

• Specific Product Precautions P.662
Valve for Water and Chemical Base Fluids
(2/3 Port Air Operated Valve)

**VCC Series**

How to Order

**Valve**

- **VCC12-00**
  - Passage number
  - 2: 2 port valve
  - 3: 3 port valve
  - 2D: 2 port/Diaphragm type (Applicable for 2 liquid paint)

**Port size**
- 00: For manifold mounting
- 02: Rc1/4 (for single unit) (Note)
- 02F: G1/4 (for single unit) (Note)

**Manifold**

- **Standard VV M CC1-06 06 C4**
  - Type (Passage number)
    - 2: 2 port valve, Cleaning valve
    - 3: 3 port valve
    - M: 2/3 port valves mixed mounting
  - 2 port valve mountable number
    - 00: No 2 port valves used
    - 02: 2 pcs. (colors)
    - 04: 4 pcs. (colors)
  - 3 port valve mountable number
    - 00: No 3 port valves used
    - 02: 2 pcs. (colors)
    - 04: 4 pcs. (colors)

**Pilot port fitting size**
- C4: ø4 One-touch fitting (Antistatic)
- C6: ø6 One-touch fitting (Antistatic)

**Circuit example**

- 2 port valve
- 3 port valve

Refer to page 658 for replacement parts.
Valve for Water and Chemical Base Fluids  
**VCC Series**

### How to Order

#### Manifold

**With gate valve**

**Passage number**

- **2** 2 port valve, Cleaning valve
- **M** 2/3 port valves mixed mounting

**2 port valve mountable number**

- **00** No 2 port valves used
- **02** 2 pcs. (colors)
- **04** 4 pcs. (colors)

**3 port valve mountable number**

- **00** No 3 port valves used
- **02** 2 pcs. (colors)
- **04** 4 pcs. (colors)

Note) Maximum mountable valve number: 40 pcs. (in total of 2 port, 3 port and gate valves)

#### Circuit example

**Gate/Cleaning valve**

<table>
<thead>
<tr>
<th>IN</th>
<th>PA</th>
<th>IN</th>
<th>PA</th>
<th>RETURN</th>
<th>RETURN</th>
<th>RETURN</th>
</tr>
</thead>
</table>

**2/3 port valve**

<table>
<thead>
<tr>
<th>IN</th>
<th>PA</th>
<th>IN</th>
<th>PA</th>
<th>RETURN</th>
<th>RETURN</th>
<th>RETURN</th>
</tr>
</thead>
</table>

**Gate valve**

<table>
<thead>
<tr>
<th>IN</th>
<th>PA</th>
<th>IN</th>
<th>PA</th>
<th>RETURN</th>
<th>RETURN</th>
<th>RETURN</th>
</tr>
</thead>
</table>

#### SUS316L Stainless steel fitting

**VCK K 0604 - 02F**

**Shape**

- **H** Male connector
- **K** 40° swivel elbow
- **L** 90° swivel elbow

**Applicable tubing (O.D. x I.D.)**

- 0604 6 x 4
- 0806 8 x 6
- 1075 10 x 7.5
- 1008 10 x 8
- 1209 12 x 9

**Port size**

- **02F** G1/4

* G1/4 has special shape of bottom seal. Please refer page 652 for details.

#### Option

**Blanking Plug Assembly**

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Description</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>For 2 port valve</td>
<td>VVCC12-10A-1</td>
<td>Blanking plug (with O-ring)</td>
<td>1</td>
</tr>
<tr>
<td>For 3 port valve</td>
<td>VVCC13-10A-1</td>
<td>Blanking plug (with O-ring)</td>
<td>1</td>
</tr>
</tbody>
</table>

*Valve for installation is not included in the manifold model.

*Gate valve and cleaning valve mountable number*

- **02** Cleaning valve (2 port valve): 1 pc. + Gate valve: 1 pc.
- **04** Cleaning valve (2 port valve): 3 pcs. + Gate valve: 1 pc.
- **06** Cleaning valve (2 port valve): 5 pcs. + Gate valve: 1 pc.

*Pilot port fitting size*

- **C4** ø4 One-touch fitting (Antistatic)
- **C6** ø6 One-touch fitting (Antistatic)

- Valve for installation is not included in the manifold model.
- Gate valve and cleaning valve (2 port valve) for installation are not included. They are ordered separately. (Gate valve is equivalent to 2 port valve.)
- When cleaning valve number is an even number, use the blanking plug for 2 port valve.

Refer to page 658 for replacement parts.
## Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>VCC12</th>
<th>VCC13</th>
<th>VCC12D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passage number</td>
<td>2 port</td>
<td>3 port[^1]</td>
<td>2 port (Diaphragm type)</td>
</tr>
<tr>
<td>Construction (Fluid contact material)</td>
<td>Poppet seal (PEEK resin + Stainless steel) + Special fluororesin sliding part</td>
<td>Poppet seal (PEEK resin + Stainless steel) + Special fluororesin diaphragm</td>
<td></td>
</tr>
<tr>
<td>Fluid</td>
<td>Water/Chemical base paint, Ink, Cleaning solvent (Water, Butyl acetate), Air</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating pressure range (MPa)</td>
<td>0 to 1.0 (Instantaneous pulsation pressure: 1.2)</td>
<td>0 to 0.7 (Instantaneous pulsation pressure: 0.9)</td>
<td></td>
</tr>
<tr>
<td>Withstand pressure (MPa)</td>
<td>2</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>Pilot pressure (MPa)</td>
<td></td>
<td>0.4 to 0.7</td>
<td></td>
</tr>
<tr>
<td>Orifice diameter (mm)</td>
<td></td>
<td>ø3.8</td>
<td></td>
</tr>
<tr>
<td>Flow rate characteristics</td>
<td>IN ⇒ OUT: 0.28 (0.33)</td>
<td>IN ⇒ OUT: 0.28 (0.33)</td>
<td>IN ⇒ RETURN: 0.25 (0.3)</td>
</tr>
<tr>
<td>Fluid temperature (°C)</td>
<td></td>
<td></td>
<td>5 to 50</td>
</tr>
<tr>
<td>Ambient temperature (°C)</td>
<td></td>
<td></td>
<td>5 to 50</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not possible (Initial lubricant: White vaseline is used.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mounting orientation</td>
<td>Unrestricted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valve leakage (cm³/min)</td>
<td>1 or less (3 port valve IN ⇒ RETURN: 20 or less)[^1]</td>
<td>1 or less[^2]</td>
<td></td>
</tr>
</tbody>
</table>

[^1]: Supply pressure: Valve leakage at 1.2 MPa (for air)  
[^2]: Supply pressure: Valve leakage at 0.9 MPa (for air)  
[^3]: Pressure cannot be applied from a 3 port valve RETURN port.

### SUS316L Stainless Steel Fitting Specifications

<table>
<thead>
<tr>
<th>Applicable tubing</th>
<th>Nylon/Fluoro tubing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>Water/Chemical base paint, Ink, Cleaning solvent (Water, Butyl acetate), Air</td>
</tr>
<tr>
<td>Max. operating pressure (at 20°C) (MPa)</td>
<td>1.0</td>
</tr>
<tr>
<td>Ambient and fluid temperature (°C)</td>
<td>0 to 60</td>
</tr>
</tbody>
</table>

### Weight

<table>
<thead>
<tr>
<th>Valve</th>
<th>VCC12 (2 port)</th>
<th>37 g</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VCC13 (3 port)</td>
<td>48 g</td>
</tr>
<tr>
<td>Blanking plug assembly</td>
<td>For 2 port</td>
<td>29 g</td>
</tr>
<tr>
<td></td>
<td>For 3 port</td>
<td>45 g</td>
</tr>
<tr>
<td>Manifold block</td>
<td>For 2 port (2 stations, one-piece type)</td>
<td>150 g</td>
</tr>
<tr>
<td></td>
<td>For 3 port (2 stations, one-piece type)</td>
<td>254 g</td>
</tr>
<tr>
<td></td>
<td>For gate valve</td>
<td>300 g</td>
</tr>
<tr>
<td>End plate</td>
<td>For 2 port</td>
<td>409 g</td>
</tr>
<tr>
<td></td>
<td>For 3 port</td>
<td>495 g</td>
</tr>
<tr>
<td></td>
<td>For 2/3 port mixed mounting</td>
<td>452 g</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fittings</th>
<th>VCKH</th>
<th></th>
<th></th>
<th>VCKK</th>
<th></th>
<th></th>
<th></th>
<th>VCKL</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ø6</td>
<td>24 g</td>
<td></td>
<td>ø6</td>
<td>25 g</td>
<td></td>
<td>ø6</td>
<td>29 g</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ø8</td>
<td>25 g</td>
<td></td>
<td>ø8</td>
<td>26 g</td>
<td></td>
<td>ø8</td>
<td>30 g</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ø10</td>
<td>33 g</td>
<td></td>
<td>ø10</td>
<td>32 g</td>
<td></td>
<td>ø10</td>
<td>37 g</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ø12</td>
<td>36 g</td>
<td></td>
<td>ø12</td>
<td>37 g</td>
<td></td>
<td>ø12</td>
<td>37 g</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Dimensions**

Mounting hole dimensions (When valve is built in to the device.)

**VCC12(D)-00**

*Recommended surface roughness of inner surface where the valve is inserted is Rz6.3.*

**VCC13-00**

*Recommended surface roughness of inner surface where the valve is inserted is Rz6.3.*
**VCC Series**

### Dimensions

**Single valve unit**

**VCC12(D)-02(F)**

- **Rc1/8 pilot (12) port**
- **G1/4, Rc1/4 IN(1) port**
- **15**
- **38.7**
- **16.5**

- **G1/4, Rc1/4 OUT(2) port**
- **15**
- **22**
- **25**

- **2 x ø6 (for M5 mounting)**
- **43**
- **6**
- **48**

- **M5 leakage detection port**
- **22**
- **30**
- **60**

- **Part number for sub-base**
  - VCC12-D-02(F)

- **Part number for sub-base**
  - VCC13-02(F)

- **Sub-base material is aluminum**
  - + hard anodized containing PTFE.

---

**VCC13-02(F)**

- **G1/4, Rc1/4 IN(1) port**
- **45.9**
- **16.5**

- **Rc1/8 pilot (12) port**
- **15**

- **G1/4, Rc1/4 OUT(2) port**
- **22**
- **58**
- **6**

- **2 x ø6 (for M5 mounting)**
- **22**
- **58**
- **6**

- **G1/4, Rc1/4 RETURN(3) port**
- **15**

- **M5 leakage detection port**
- **30**
- **38.4**
- **70**

- **Part number for sub-base**
  - VCC13-02(F)

- **Part number for sub-base**
  - VCC13-02(F)

- **Sub-base material is aluminum**
  - + hard anodized containing PTFE.
Valve for Water and Chemical Base Fluids VCC Series

Dimensions

Manifold

L1 = n / 2 x 30 + 16  L2 = n / 2 x 30 + 32

n = Number of valves (cleaning valve + gate valve + other valves)  n: Stations (mm)

<table>
<thead>
<tr>
<th>n</th>
<th>2</th>
<th>4</th>
<th>6</th>
<th>8</th>
<th>10</th>
<th>12</th>
<th>14</th>
<th>16</th>
<th>18</th>
<th>20</th>
<th>22</th>
<th>24</th>
<th>26</th>
<th>28</th>
<th>30</th>
<th>32</th>
<th>34</th>
<th>36</th>
<th>38</th>
<th>40</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>46</td>
<td>76</td>
<td>106</td>
<td>136</td>
<td>166</td>
<td>196</td>
<td>226</td>
<td>256</td>
<td>286</td>
<td>316</td>
<td>346</td>
<td>376</td>
<td>406</td>
<td>436</td>
<td>466</td>
<td>496</td>
<td>526</td>
<td>556</td>
<td>586</td>
<td>616</td>
</tr>
<tr>
<td>L2</td>
<td>62</td>
<td>92</td>
<td>122</td>
<td>152</td>
<td>182</td>
<td>212</td>
<td>242</td>
<td>272</td>
<td>302</td>
<td>332</td>
<td>362</td>
<td>392</td>
<td>422</td>
<td>452</td>
<td>482</td>
<td>512</td>
<td>542</td>
<td>572</td>
<td>602</td>
<td>632</td>
</tr>
</tbody>
</table>

∗ Aluminum + hard anodized containing PTFE and POM are used for a part of the manifold material. Refer to page 660 for details.

< > Pilot port is C6.
VCC Series

Dimensions

SUS316L Stainless steel fittings
Mounting female thread recommended dimensions

VCKH Male connector

- Width across flats E
  - After tightening manually, tighten 1.5 to 2 more turns.
  - (Equivalent tightening torque: T)

- Width across flats F
  - Tightening torque: Tighten within 10 ± 1 N·m.

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Indication of A</th>
<th>øB</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCKH1209-02F</td>
<td>12/9</td>
<td>13</td>
<td>38.5</td>
<td>10</td>
<td>19</td>
<td>17</td>
<td>18.5</td>
<td>9 to 12 N·m</td>
</tr>
<tr>
<td>VCKH1008-02F</td>
<td>10/8</td>
<td>11</td>
<td>38</td>
<td>9</td>
<td>17</td>
<td>17</td>
<td>18.5</td>
<td>6 to 9 N·m</td>
</tr>
<tr>
<td>VCKH1075-02F</td>
<td>10·75</td>
<td>11</td>
<td>38</td>
<td>9</td>
<td>17</td>
<td>17</td>
<td>18.5</td>
<td>6 to 9 N·m</td>
</tr>
<tr>
<td>VCKH0806-02F</td>
<td>8/6</td>
<td>9</td>
<td>36.5</td>
<td>8</td>
<td>14</td>
<td>14</td>
<td>16</td>
<td>4 to 9 N·m</td>
</tr>
<tr>
<td>VCKH0604-02F</td>
<td>6/4</td>
<td>7</td>
<td>36.5</td>
<td>8</td>
<td>12</td>
<td>14</td>
<td>15</td>
<td>3 to 8 N·m</td>
</tr>
</tbody>
</table>

VCKK 40° swivel elbow

- Width across flats E
  - After tightening manually, tighten 1.5 to 2 more turns.
  - (Equivalent tightening torque: T)

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Indication of A</th>
<th>øB</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCKK1209-02F</td>
<td>12/9</td>
<td>13</td>
<td>49.5</td>
<td>10</td>
<td>19</td>
<td>18.5</td>
<td>9 to 12 N·m</td>
<td></td>
</tr>
<tr>
<td>VCKK1008-02F</td>
<td>10/8</td>
<td>11</td>
<td>48.5</td>
<td>9</td>
<td>17</td>
<td>18.5</td>
<td>6 to 9 N·m</td>
<td></td>
</tr>
<tr>
<td>VCKK1075-02F</td>
<td>10·75</td>
<td>11</td>
<td>48.5</td>
<td>9</td>
<td>17</td>
<td>18.5</td>
<td>6 to 9 N·m</td>
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<tr>
<td>VCKK0806-02F</td>
<td>8/6</td>
<td>9</td>
<td>46</td>
<td>8</td>
<td>14</td>
<td>16</td>
<td>4 to 9 N·m</td>
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<tr>
<td>VCKK0604-02F</td>
<td>6/4</td>
<td>7</td>
<td>45.5</td>
<td>8</td>
<td>12</td>
<td>15</td>
<td>3 to 8 N·m</td>
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</tr>
</tbody>
</table>
Valve for Water and Chemical Base Fluids  
**VCC Series**

**Dimensions**

**VCKL  90° swivel elbow**

---

**Dimensions**

**Width across flats**

- **A**
- **B**
- **G**

**Approx. E**

**Width across flats G**

> After tightening manually, tighten 1.5 to 2 more turns. (Equivalent tightening torque: T)

**Approx. H**

**Width across flats 14**

> Tightening torque: Tighten within 10 ± 1 N·m.

---

**Part no.** | **Indication of A** | **øB** | **C** | **D** | **E** | **F** | **G** | **H** | **T** |
--- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
VCKL1209-02F | 12/9 | 13 | 43.5 | 33 | 30.5 | 10 | 19 | 18.5 | 9 to 12 N·m |
VCKL1008-02F | 10/8 | 11 | 42.5 | 33 | 30 | 17 | 18.5 | 18.5 | 6 to 9 N·m |
VCKL1075-02F | 10·75 | 11 | 42.5 | 33 | 30 | 9 | 17 | 18.5 | 6 to 9 N·m |
VCKL0806-02F | 8/6 | 9 | 40 | 32 | 27.5 | 8 | 14 | 16 | 4 to 9 N·m |
VCKL0604-02F | 6/4 | 7 | 38.5 | 32 | 27.5 | 8 | 12 | 16 | 3 to 8 N·m |
### Tool for Attaching/Detaching Valve

**VCC-G-A**
- For attaching/detaching valve
- Ø8 Knurled
- M16 x 1.5
- 104 mm

**VCC-G-B** (for socket wrench)
- Ø21
- 24 mm
- 4 x Ø1.8

### Tool for Disassembling/Cleaning Valve Element

**VCC12(D) 2 port valve**

**VCC-G-C**
- For 2 port valve
- 4 x Ø1.8
- 105 mm

**VCC13 3 port valve**
Valve for Water and Chemical Base Fluids  

**VCC Series**

### Union Nut Socket

**VCC-G-D-1** (Applicable fitting VCK-1008-1075)

- Width across flats: 19

**VCC-G-D-2** (Applicable fitting VCK-0806-0604)

- Width across flats: 17

**For extending the socket**

- VCC-G-D-1
- VCC-G-D-2

---

### Dimensions

- Width across flats: 19
- Width across flats: 17

---

**VNA**

**VNB**

**SGC**

**SGH**

**VNC**

**VNH**

**VND**

**VCC**

**TQ**

---

655
**VCC Series**

**Disassembly/Assembly/Maintenance Procedure**

**Cleaning Valve Element**

Special tool part no.: VCC-G-C

<table>
<thead>
<tr>
<th>VCC12-00 (2 port valve)</th>
<th>VCC13-00 (3 port valve)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Procedure</strong></td>
<td></td>
</tr>
<tr>
<td>① Loosen the orifice body with a tool and remove it.</td>
<td></td>
</tr>
<tr>
<td>② Clean the valve.</td>
<td></td>
</tr>
<tr>
<td>③ Assemble a new orifice body.</td>
<td></td>
</tr>
</tbody>
</table>

**Tighten the screw until it hits the body by pressing the orifice body with approx. 100 to 200 N of force.**

(+ Additional tightening is not necessary.)

Control dimension with full length. (2 port valve: 44.8 to 45.1 mm, 3 port valve: 54.6 to 54.9 mm)

Reference tightening torque is approx. 1 to 2 N·m for VCC12(D)-00 (2 port valve), and 0.5 to 1 N·m for VCC13-00 (3 port valve).

There is a possibility of damaging threads if tightening exceeds the tightening torque range.
Valve for Water and Chemical Base Fluids  
**VCC Series**

### How to Remove the Valve

**Special tool part no.: VCC-G-A, VCC-G-B (Refer to page 654.)**

**Procedure**

1. Loosen the mounting nut with a tool to remove.
2. Remove the indicator lamp cover.
3. Turn 45 to 90° (idle turn) clockwise with a tool to avoid O-ring adhesion.
4. Pull out the valve straight.

### How to Attach the Valve

Apply vaseline (commercially available) on the O-ring surface, and insert straight. (Note the direction shown on the label.)

After mounting the indicator lamp cover, tighten the mounting nut to a tightening torque of 2.5 to 3.5 N·m of tightening torque.

Attach and remove the valve straight. If the paint applied to the O-ring for paint adheres to the pneumatic passage, clean it.

When inserting, apply vaseline to the O-ring and the inner surface of the base and insert slowly so that the O-ring is not twisted or cut.

The arrow shown on the model label of the valve is set for the optimum direction for cleaning. Mount the valve so that the arrow comes to IN port position.

---

**O-ring for paint seal** Special FKM

**O-ring for air** HNBR

**2 port valve**

**3 port valve**

---

**Thread for detaching body (M16 x 1.5)**
VCC Series
Replacement Parts

VV□CC1□: Manifold

M5 x 20 Hexagon socket head cap screw
Tightening torque: 3.5 ± 0.5 N·m

C: 2 port valve manifold block assembly
Manifold block assembly for gate valve

D: 3 port valve manifold block assembly

D4 One-touch fitting
D6 One-touch fitting

M4 x 16 Round head combination screw
Tightening torque: 1.2 ± 0.2 N·m

Component Parts

<table>
<thead>
<tr>
<th>Model</th>
<th>Part no.</th>
<th>Description</th>
<th>Symbol</th>
<th>Component</th>
<th>Material</th>
<th>Qty.</th>
<th>Order qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VV2CC1</td>
<td>VVCC12-OR-1</td>
<td>O-ring between manifold blocks</td>
<td>C-2</td>
<td>O-ring</td>
<td>Special FKM</td>
<td>1</td>
<td>1 set unit</td>
</tr>
<tr>
<td>VV3CC1</td>
<td>VVCC12-50A-LTC4</td>
<td>O4 One-touch fitting</td>
<td>C-5</td>
<td>One-touch fitting</td>
<td>—</td>
<td>1</td>
<td>1 set unit</td>
</tr>
<tr>
<td>VVMCC1</td>
<td>(common)</td>
<td>VVCC12-50A-LTC6</td>
<td>D-6</td>
<td>O-ring</td>
<td>Special FKM</td>
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<td>1 set unit</td>
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<tr>
<td>VV3CC1</td>
<td>VVCC12-OR-3</td>
<td>O-ring</td>
<td>F-3</td>
<td>O-ring</td>
<td>Special FKM</td>
<td>1</td>
<td>1 set unit</td>
</tr>
<tr>
<td>VVMCC1</td>
<td>VVCC13-OR-1</td>
<td>O-ring assembly between port blocks</td>
<td>D-3</td>
<td>O-ring</td>
<td>Special FKM</td>
<td>2</td>
<td>1 set unit</td>
</tr>
</tbody>
</table>

Note: If the manifold is disassembled or rearranged, replace the O-rings with new O-rings. (Specific Product Precautions 4/Maintenance 5 on page 665)
Valve for Water and Chemical Base Fluids  

**VCC Series**

### 2/3 Port Valve

**A: 2 port valve**

**Standard VCC12-00**

1. Port 1
2. Port 2
3. Inlet
4. Outlet
5. Diaphragm
6. Piston seal
7. (Note)
8. Body: Aluminum + Anodized

**Diaphragm / 2 liquid paint type VCC12D-00**

1. Port 1
2. Port 2
3. Inlet
4. Outlet
5. Diaphragm
6. Piston seal: HNBR
7. (Note)

**Component Parts**

<table>
<thead>
<tr>
<th>Model</th>
<th>Part no.</th>
<th>Description</th>
<th>Symbol</th>
<th>Component</th>
<th>Material</th>
<th>Qty.</th>
<th>Order qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCC12(D)-00 (dedicated)</td>
<td></td>
<td>Orifice body assembly</td>
<td>A-1</td>
<td>Orifice body</td>
<td>PEEK resin</td>
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<td>1 set unit</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>A-2</td>
<td>PTFE seal</td>
<td>Special PTFE</td>
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<td>1 set unit</td>
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<td>Special FKM</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>A-4</td>
<td>Sleeve</td>
<td>POM</td>
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<td></td>
<td>A-5</td>
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<td>O-ring</td>
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<td></td>
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<td>O-ring</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>A-8</td>
<td>Name plate</td>
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<td>A-2</td>
<td>PTFE seal</td>
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<td>O-ring</td>
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<td>A-4</td>
<td>Name plate</td>
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</tbody>
</table>

**B: 3 port valve**

**VCC13-00**

1. Port 1
2. Port 2
3. Port 3
4. Inlet
5. Outlet
6. Diaphragm
7. Piston seal: HNBR
8. (Note)

**Component Parts**

<table>
<thead>
<tr>
<th>Model</th>
<th>Part no.</th>
<th>Description</th>
<th>Symbol</th>
<th>Component</th>
<th>Material</th>
<th>Qty.</th>
<th>Order qty.</th>
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</thead>
<tbody>
<tr>
<td>VCC13-00 (dedicated)</td>
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<td>O-ring</td>
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<td>O-ring</td>
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<td></td>
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<td>B-4</td>
<td>Name plate</td>
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<td>VCC13-OR-1</td>
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<td>O-ring</td>
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</table>

**VCC12(D)-00 VCC13-00 (common)**

<table>
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<tr>
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<th>Part no.</th>
<th>Description</th>
<th>Symbol</th>
<th>Component</th>
<th>Material</th>
<th>Qty.</th>
<th>Order qty.</th>
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<td>A-10</td>
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**VCC10-30A-1**

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<th>Component Material Qty.</th>
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<tbody>
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<td>A-10</td>
<td>Switching display cover</td>
<td>A-PET</td>
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</tbody>
</table>

**Note:** If the manifold is disassembled or rearranged, replace the O-rings with new O-rings. (Specific Product Precautions 4/Maintenance 5 on page 665)
### Parts Description

#### Model Symbol | Part no. | Description | Symbol | Description | Material | Surface treatment | Note |
<table>
<thead>
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<th></th>
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<th></th>
<th></th>
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</thead>
<tbody>
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<td><strong>A</strong></td>
<td>VCC12(D)-00</td>
<td>2 port valve</td>
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</tr>
<tr>
<td><strong>B</strong></td>
<td>VCC13-00</td>
<td>3 port valve</td>
<td></td>
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</tr>
<tr>
<td><strong>C</strong></td>
<td>VCC12-1A-02F</td>
<td>Manifold block assembly for 2 port valve</td>
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<td>For VVCC12-1A-02F C4</td>
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<td>VCC12-1G-02F</td>
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<td>For VVCC12-1G-02F C4</td>
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<td>( \text{C4: ø4 piping C6: ø6 piping} )</td>
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<tr>
<td><strong>D</strong></td>
<td>VCC13-1A-02F</td>
<td>Manifold block assembly for 3 port valve</td>
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<td><em>Pilot port</em> C4: ø4 piping C6: ø6 piping</td>
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<tr>
<td></td>
<td>( \text{VVCC13-21A} )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>E</strong></td>
<td>VCC12-2A-02F</td>
<td>U-side end plate assembly for 2 port valve</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>When neighboring valve is a 2 port valve.</td>
</tr>
<tr>
<td></td>
<td>VCC12-3A-1</td>
<td>D-side end plate assembly for 2 port valve</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>When neighboring valve is a 2 port valve.</td>
</tr>
<tr>
<td></td>
<td>VCC12-10A-1</td>
<td>Blanking plug assembly for 2 port valve</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VCC13-2A-02F</td>
<td>U-side end plate assembly for 3 port valve</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>When neighboring valve is a 3 port valve.</td>
</tr>
<tr>
<td></td>
<td>VCC13-3A-1</td>
<td>D-side end plate assembly for 3 port valve</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>When neighboring valve is a 3 port valve.</td>
</tr>
<tr>
<td></td>
<td>VCC13-10A-1</td>
<td>Blanking plug assembly for 3 port valve</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>F</strong></td>
<td>VCC12-20A-□</td>
<td>Tie-rod</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VCC12-21A</td>
<td>Tie-rod for adding stations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3 pcs. make up one set.</td>
</tr>
</tbody>
</table>

**Note:** When the manifold is shipped out, tie-rods for two extra stations are used. You can add or reduce 2 stations of manifold block (4 valves in total).

**Example:** For manifold block 4 stations (8 valves)

<table>
<thead>
<tr>
<th>Tie-rod for 2 stations</th>
<th>Tie-rod for adding stations</th>
<th>Tie-rod for adding stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>(VCC12-20A-2)</td>
<td>(VCC12-21A)</td>
<td>(VCC12-21A)</td>
</tr>
</tbody>
</table>

**Example:** For manifold block 5 stations (10 valves)

<table>
<thead>
<tr>
<th>Tie-rod for 3 stations</th>
<th>Tie-rod for adding stations</th>
<th>Tie-rod for adding stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>(VCC12-20A-3)</td>
<td>(VCC12-21A)</td>
<td>(VCC12-21A)</td>
</tr>
</tbody>
</table>
## Component Parts

<table>
<thead>
<tr>
<th>Model</th>
<th>Symbol</th>
<th>Part no.</th>
<th>Description</th>
<th>Conforming item</th>
<th>Material</th>
<th>Qty.</th>
<th>Order qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td></td>
<td>KFN-06-X2</td>
<td>Union nut</td>
<td>VCKL0604-02F</td>
<td>C3604BD + Ni plated</td>
<td>1</td>
<td>1 set unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>KFN-08-X2</td>
<td></td>
<td>VCKL0806-02F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>KFN-10-X2</td>
<td></td>
<td>VCKL1075-02F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>KFN-12-X2</td>
<td></td>
<td>VCKL1209-02F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td></td>
<td>KFS-06</td>
<td></td>
<td>VCKL0604-02F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>KFS-08</td>
<td></td>
<td>VCKL0806-02F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>KFS-10</td>
<td></td>
<td>VCKL1075-02F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>KFS-12</td>
<td></td>
<td>VCKL1209-02F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>VCKK-4-1</td>
<td>Gasket</td>
<td></td>
<td>Nylon</td>
<td>1</td>
<td>10 set unit</td>
</tr>
</tbody>
</table>

* Nut: Aluminum + Ni plated
  * VCKK, VCKL only

VCC Series

Valve for Water and Chemical Base Fluids

SUS316L Stainless Steel Fitting
### VCC Series
#### Specific Product Precautions 1

Be sure to read this before handling the products.
Refer to back page 50 for Safety Instructions and pages 17 to 19 for 2 Port Solenoid Valve for Fluid Control Precautions.

---

### Design

#### Warning
1. **Cannot be used as an emergency shutoff valve, etc.**
   The valves presented in this catalog are not designed for safety applications such as an emergency shutoff valve. If the valves are used in this type of system, other reliable safety assurance measures should also be adopted.
2. **Maintenance space**
   The installation should allow sufficient space for maintenance activities.
3. **When an impact, such as water hammer, etc., caused by the rapid pressure fluctuation is applied, the solenoid valve may be damaged. Use care when handling.**

### Piping

#### Caution
1. **Preparation before piping**
   Before piping is connected, it should be thoroughly blown out with air (flushing) or washed to remove chips, cutting oil and other debris from inside the pipe. Install piping so that it does not apply pulling, pressing, bending or other forces on the valve body.
2. **Winding of sealant tape**
   When connecting pipes, fittings, etc., be sure that chips from the pipe threads and sealing material do not enter the valve. Furthermore, when sealant tape is used, leave 1.5 to 2 thread ridges exposed at the end of the threads.

### Selection

#### Warning
1. **Confirm the specifications.**
   Give careful consideration to the operating conditions such as the application, fluid and environment, and use within the operating ranges specified in this catalog. Also, be sure to carry out an evaluation using an actual product to ensure that problems do not occur under the working conditions.
2. **Fluid**
   1) **Applicable fluid on the list may not be used depending on the operating condition.**
      Give adequate confirmation, and then determine a model, just because the compatibility list shows the general case.
3. **Air quality**
   1) **Use clean air.**
      Do not use compressed air which includes chemicals, synthetic oils containing organic solvents, salt or corrosive gases, etc. as it can cause damage or malfunction.
   2) **Install air filters.**
      Install air filters close to valves at their upstream side. A filtration degree of 5 µm or less should be selected.
   3) **Install an air dryer or after-cooler, etc.**
      Compressed air that includes excessive drainage may cause malfunction of valves and other pneumatic equipment. To prevent this, install an air dryer or after-cooler, etc.
   4) **If excessive carbon powder is generated, eliminate it by installing mist separators at the upstream side of valves.**
      If excessive carbon powder is generated by the compressor, it may adhere to the inside of the valves and cause a malfunction. Refer to Best Pneumatics No.5 for further details on compressed air quality.
4. **Ambient environment**
   Use within the operable ambient temperature range. Confirm the compatibility between the product’s composition materials and the ambient atmosphere. Be sure that the fluid used does not touch the external surface of the product.
5. **Countermeasures against static electricity**
   Take measures to prevent static electricity since some fluids can cause static electricity.

---

### Operating Environment

#### Warning
1. **Do not use the valves in an atmosphere having corrosive gases, chemicals, salt water, water, steam, or where there is direct contact with any of these.**
2. **Do not use in locations subject to vibration or impact.**
3. **Do not use in locations where radiated heat will be received from nearby heat sources.**
4. **Employ suitable protective measures in locations where there is contact with water droplets, oil or welding spatter, etc.**
**Caution**

1. **Filters and strainers**
   1) Be careful regarding clogging of filters and strainers.
   2) Replace filter elements after one year of use, or earlier if the pressure drop reaches 0.1 MPa.
   3) Clean strainers when the pressure drop reaches 0.1 MPa.

2. **Storage**
   In case of long term storage after use with heated water, thoroughly remove all moisture to prevent rust and deterioration of rubber materials, etc.

3. **Exhaust the drain from an air filter periodically.**
### Design

#### Warning

1. **Leakage detection port**
   - The valve has leak detection area to completely separate the fluid area and pilot pressure area. If leakage is found, valve replacement and maintenance are necessary immediately. Fluids that solidify or being cured may block the leak detection so port and leak may not be detected.

2. **If applying high voltage to the fluid, it must be earthed by using the bolt to mount the base.**
   - Do not use sealing tape when piping, as it may insulate.

### Selection

#### Caution

1. **Operating fluid**
   - Eliminate all solid material larger than 150 µm in the fluid to avoid valve failure.

### Piping

#### Caution

1. **Piping to pilot port**
   - Condensation may be formed in the piping to the pilot port, due to factors such as its length. The life of the valve will be shortened if condensed moisture enters the pilot port. To prevent condensation, the installation of a quick exhaust is recommended.

2. **Tube attachment/detachment for One-touch fittings/stainless steel fittings**
   1. **Attaching of the tubing**
      a. Divide a tube with no external flaws at a right angle. Use tube cutter TK-1, 2, or 3 when dividing the tube. Do not use pliers, nipper pliers, scissors, etc. This may result in flattening and an inability to join, or the tube falling out and air leakage.
      b. The outer diameter of polyurethane tubing will expand when internal pressure is applied, and so you may not be able to reattach One-touch fittings. Check the tubing outer diameter of all tubing other than for the release bushing, and reattach the One-touch fittings without dividing the tubing if the outer diameter precision is more than ±0.15 mm. When reattaching the One-touch fittings, check whether the tubing can smoothly pass through the release bushing.
      c. Grasp the tubing, slowly push it straight (0 to 5°) into the One-touch fitting until it comes to a stop.
      d. Once pushed all the way in, gently pull the tubing back, and check that it hasn’t come all the way out. If not firmly inserted all the way in, it may result in air leakage and the tube falling out.

#### Lubrication

#### Caution

1. **Do not lubricate the valve.**
   - The valve uses white vaseline as lubricant.

### Table: Fitting size, Appropriate tightening rotations, and Equivalent tightening torque

<table>
<thead>
<tr>
<th>Fitting size</th>
<th>Appropriate tightening rotations</th>
<th>Equivalent tightening torque N-m</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCK□06</td>
<td>1.5 to 2.0</td>
<td>3 to 8</td>
</tr>
<tr>
<td>VCK□08</td>
<td>1.5 to 2.0</td>
<td>4 to 9</td>
</tr>
<tr>
<td>VCK□10</td>
<td>1.5 to 2.0</td>
<td>6 to 9</td>
</tr>
<tr>
<td>VCK□12</td>
<td>1.5 to 2.0</td>
<td>9 to 12</td>
</tr>
</tbody>
</table>

2. **Detaching of the tubing**
   a. Push in the release button sufficiently, pushing the collar evenly.
   b. Pull the tube out while pressing so that the release button is not returned. If the release button is not pressed sufficiently, gripping will instead increase and it will become harder to pull out.
   c. Before reusing the detached tube, first cut off the portion of tubing that had been gripped. Using the portion of tubing that had been gripped will lead to air leakage and the tube will become harder to detach.

3. **Joining a metal rod accessory**
   - After joining a metal rod accessory (KC series, etc.) to a One-touch fitting, do not use a tube, resin plug, reducer, etc, as it may result in the tube falling out.

4. **When attaching a tube, resin plug, metal rod, etc., do not attach while pressing on the release bushing.**

5. **When using another brand tubing, check whether the tubing material and outer diameter precision meet the following specifications:**
   1. Nylon tubing within ±0.1 mm
   2. Soft nylon tubing within ±0.1 mm
   3. Polyurethane tubing within ±0.15 mm, ±0.2 mm
   - If tubing outer diameter tolerance is not met, do not use if tubing inner diameter differs from our brand.
   - This may result in inability to join, leakage, the tube falling out, and damage to the fitting.
Maintenance

Caution

1. Removing the product
   1) Shut off the fluid supply and release the fluid pressure in the system.
   2) Dismount the product.

2. Low frequency operation
   Switch valves at least once every 30 days to prevent malfunction. Also, in order to use it under the optimum state, conduct a regular inspection once a half year.

3. Stoppage of line
   When the line is stopped for a long time, clean the valve so that fluid (paint, ink, etc.) does not solidify or being cured.

4. Prolonged usage
   Leakage may occur with fittings and tube material as they change over time. Additionally tighten union nuts.
   Additional tightening should be 1/6 to 1/4 turn.
   If leakage occurs even after additional tightening, replace the sleeve with a new one.

5. Due to the characteristics of the material (Special FKM), the compression value of the O-rings of the VCC series is higher. Therefore, when disassembly or rearrangement of the product is performed, leakage may occur if the O-rings are not replaced. If disassembly or rearrangement is performed, replace the O-rings with new O-rings.

6. If disassembly, rearrangement, or maintenance is performed, perform sufficient safety checks before operating the system. In addition, SMC assumes no responsibility concerning damage caused by methods other than those described in the catalog and operation manual.

Warning

If the product to be returned is contaminated or is possibly contaminated with substances that are harmful to humans, for safety reasons, please contact SMC beforehand and then employ a specialist cleaning company to decontaminate the product. After the decontamination prescribed above has been carried out, submit a Product Return Request Sheet or the Detoxification/Decontamination Certificate to SMC and await SMC’s approval and further instructions before attempting to return the item.

Please refer to the International Chemical Safety Cards (ICSC) for a list of harmful substances.

If you have any further questions, please don’t hesitate to contact your SMC sales representative.
Manifold Specifications

VCC Series

1. How to Order Manifold

VV M CC1-06 10 C4 - G04

1. Type (Passage number)
   - 2: 2 port valve
   - 3: 3 port valve
   - M: 2/3 port valves mixed mounting

2. 2 port valve mountable number (Note 1)
   - 00: Without 2 port valve
   - 02: 2 pcs. (colors)
   - 04: 4 pcs. (colors)
   - ...:
   - 40: 40 pcs. (colors) (Note 2)

3. 3 port valve mountable number (Note 1)
   - 00: Without 3 port valve
   - 02: 2 pcs. (colors)
   - 04: 4 pcs. (colors)
   - ...:
   - 40: 40 pcs. (colors) (Note 2)

4. Pilot port fitting size
   - C4: ø4 One-touch fitting
   - C6: ø6 One-touch fitting

5. Gate valve and cleaning valve mountable number (Note 1)
   - Nil: Without gate valve
   - G02: Cleaning valve: 1 pc. + Gate valve: 1 pc.
   - G04: Cleaning valve: 3 pcs. + Gate valve: 1 pc.
   - G06: Cleaning valve: 5 pcs. + Gate valve: 1 pc.

Note 1) Two valves can be installed per manifold block. Total valve number must be an even number.
Note 2) Maximum valve number is forty (40) valves (colors) by total of 2 + 3 + 5.
Note 3) When "Without gate valve" is selected, use 2 port valve of 2 as a cleaning valve.

2. How to Order Valve

VCC1 2 - 00

1. Type (Passage number)
   - 2: 2 port valve
   - 3: 3 port valve

3. How to Order Blanking Plug

VVCC1 2 - 10A - 1

1. Type (Passage number)
   - 2: For 2 port valve
   - 3: For 3 port valve

4. How to Order SUS316L Stainless Steel Fitting

VCK K 1075 - 02F

1. Type (Shape)
   - K: 40° swivel elbow
   - L: 90° swivel elbow
   - H: Male connector

2. Piping port
   - 1209: Piping port for ø12 x ø9
   - 1008: Piping port for ø10 x ø8
   - 1075: Piping port for ø10 x ø7.5
   - 0806: Piping port for ø8 x ø6
   - 0604: Piping port for ø6 x ø4

Cleaning unit (with gate valve) side —— Standard unit side

Cleaning valve with gate valve mountable number
* In this case, four (4) cleaning valves (including gate valve)

Used when number of valves used on the manifold base is an odd number.

Stations

IN port

Piping port fitting

OUT port

RETURN port

IN port

1075

02F

1008

1075

0806

0604
**SMC Corporation**

**Manifold Specification Sheet (VCC Series: VV□CC1)**

- **Company name**: [Redacted]
- **Department**: [Redacted]
- **Person in charge**: [Redacted]
- **Device description**: [Redacted]
- **Drawing number**: [Redacted]
- **Production number**: [Redacted]

**Ordered part number (Please order with this part number.)**

- **Manifold valve part no.** [Redacted]
- **Valve** [Redacted]

**Specification Sheet**

*Fill in the symbol for stainless steel fitting. For others, mark necessary items with a circle.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Description/Model</th>
<th>Part number (Mountable valve number)</th>
<th>Description</th>
<th>Part number (Mountable valve number)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Part number (Mountable valve number)</td>
<td>Description</td>
<td>Part number (Mountable valve number)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G06  G04  G02</td>
<td>Description</td>
<td>Part number (Mountable valve number)</td>
</tr>
<tr>
<td>2 port valve (Sliding type)</td>
<td>VCC12-00</td>
<td>5  3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 port valve (Ductus type)</td>
<td>VCC12D-00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleaning unit</td>
<td>IN port</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard unit</td>
<td>OUT port side</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Select stainless steel fitting for IN, RETURN port from the table below, and enter the symbol into the specification table.**

**Symbol**

- A: For piping ø12 x ø9 40° swivel elbow
- B: For piping ø10 x ø8 40° swivel elbow
- C: For piping ø10 x ø7.5 40° swivel elbow
- D: For piping ø8 x ø8 40° swivel elbow
- E: For piping ø6 x ø4 40° swivel elbow
- F: For piping ø12 x ø9 Male connector
- G: For piping ø10 x ø8 Male connector
- H: For piping ø10 x ø7.5 Male connector
- J: For piping ø8 x ø8 Male connector
- K: For piping ø6 x ø4 Male connector

**40° swivel elbow, piping direction is on D side.**

**Fill in the model number in the table below for connecting the fitting to OUT port.**

- **OUT port Stainless steel fitting** [Redacted]

**Customer code** [Redacted]

**U/C** [Redacted]

**Department code** [Redacted]

**Code for person in charge** [Redacted]

**Registered image no.** [Redacted]

**Date of delivery** [Redacted]

**SMC order no.** [Redacted]

---

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#### Manifold Specifications — Example of how to fill in

<table>
<thead>
<tr>
<th>Condition</th>
<th>Valve type</th>
<th>Valve arrangement</th>
<th>Fitting arrangement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 port valve</td>
<td>7 pcs.</td>
<td>IN port</td>
</tr>
<tr>
<td></td>
<td>3 port valve</td>
<td>24 pcs.</td>
<td>IN port</td>
</tr>
<tr>
<td>Cleaning unit</td>
<td>Gate valve</td>
<td>1 pc.</td>
<td>RETURN port</td>
</tr>
<tr>
<td></td>
<td>Cleaning valve</td>
<td>4 pcs.</td>
<td>OUT port</td>
</tr>
</tbody>
</table>

- **Put "M", because 2 port valves (including cleaning unit) and 3 port valves are installed together.**
- **Seven (7) 2 port valves are installed. Since two valves are installed per manifold base, it must be an even number, so the number of valve that can be installed is "08". Specify four (4) stations for manifold.**
- **When twenty-four (24) 3 port valves are used, specify "24". Specify twelve (12) stations for manifold.**
- **Specify when the gate valve is necessary for cleaning valve. This example requires one gate valve and four cleaning valves, but specify "06" for number of valves that can be installed, as this must be an even number.**

#### Fill in for faxed order

- Customer code
- Date of delivery
- Serial no.
- Component list:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>VVCCI-08</td>
<td>10</td>
<td>VCK/068-02F</td>
<td>4</td>
<td>VCK/1209-02F</td>
<td>40</td>
</tr>
<tr>
<td>VCC/3-00</td>
<td>2</td>
<td>VCK/0604-02F</td>
<td>4</td>
<td>VCK/1008-02F</td>
<td>40</td>
</tr>
<tr>
<td>VVCCI/2-0A-1</td>
<td>2</td>
<td>VCK/1008-02F</td>
<td>4</td>
<td>VCK/1008-02F</td>
<td>40</td>
</tr>
<tr>
<td>VCK/209-02F</td>
<td>24</td>
<td>VCK/1008-02F</td>
<td>4</td>
<td>VCK/1008-02F</td>
<td>40</td>
</tr>
</tbody>
</table>

2 port valve is specified for the gate valve and the cleaning valve. 7 valves + 1 valve + 4 valves = 12 valves